

This listing of claims presented below replaces all prior versions and listings of claims in the application.

### Listing of Claims

#### IN THE CLAIMS

1. (Currently Amended) A titanium dioxide in a form of fine particles composite having a molecular recognition capacity and a photocatalytic activity, comprising titanium dioxide having a surface which is modified with a hydrophilic polymer being bonded to hydroxyl group of titanium dioxide through an ester linkage, a molecule having a binding capacity specific for a target molecule being immobilized on the carboxyl groups in the hydrophilic polymer.

2. (Original) The titanium dioxide composite having a molecular recognition capacity according to claim 1, wherein said titanium dioxide is an anatase or rutile form of titanium dioxide.

3. (Previously Presented) The titanium dioxide composite having a molecular recognition capacity according to claim 1, wherein said titanium dioxide has a particle diameter of 2 to 200 nm.

4. (Previously Presented) The titanium dioxide composite having a molecular recognition capacity according to claim 1, wherein said titanium dioxide is a composite titanium dioxide

comprising titanium dioxide and a magnetic material.

5. (Previously Presented) The titanium dioxide composite having a molecular recognition capacity according to claim 1, wherein said hydrophilic polymer is a water soluble polymer.

6. (Original) The titanium dioxide composite having a molecular recognition capacity according to claim 5, wherein said water soluble polymer contains a polycarboxylic acid.

7. (Original) The titanium dioxide composite having a molecular recognition capacity according to claim 5, wherein said water soluble polymer comprises a copolymer having a plurality of carboxyl group units in its molecule.

8. (Previously Presented) The titanium dioxide composite having a molecular recognition capacity according to claim 1, wherein the molecule having a binding capacity specific for a target molecule is an amino acid, a peptide, a simple protein, a complex protein, or an antibody.

9. (Previously Presented) The titanium dioxide composite having a molecular recognition capacity according to claim 1, wherein the molecule having a binding capacity specific for a target molecule is a nucleotide, a nucleotide, a nucleic acid, or a peptide nucleic acid.

10. (Previously Presented) The titanium dioxide composite having a molecular recognition capacity according to claim 1, wherein the molecule having a binding capacity specific for a

target molecule is a monosaccharide, a sugar chain, a polysaccharide, and a complex carbohydrate.

11. (Previously Presented) The titanium dioxide composite having a molecular recognition capacity according to claim 1, wherein the molecule having a binding capacity specific for a target molecule is a fatty acid, a fatty acid derivative, a simple lipid, and a complex lipid.

12. (Previously Presented) The titanium dioxide composite having a molecular recognition capacity according to claim 1, wherein the molecule having a binding capacity specific for a target molecule is a physiologically active substance.

13. (Currently Amended) A dispersion liquid of a titanium dioxide composite having a molecular recognition capacity, wherein comprising the titanium dioxide composite having a molecular recognition capacity according to ~~claim 8~~ claim 1, contained in an aqueous solution of which the introduction into a living body is acceptable.

14. (Original) The dispersion liquid of a titanium dioxide composite having a molecular recognition capacity according to claim 13, wherein the aqueous solution is a pH buffer solution.

15. (Original) The dispersion liquid of a titanium dioxide composite having a molecular recognition capacity according to claim 13, wherein the aqueous solution is a physiological saline.

16. (Previously Presented) The dispersion liquid of a titanium dioxide composite having a molecular recognition capacity according to claim 13, wherein the titanium dioxide composite having a molecular recognition capacity is included in an inclusion material of which the introduction into a living body is acceptable.

17. (Original) The dispersion liquid of a titanium dioxide composite having a molecular recognition capacity according to claim 16, wherein said inclusion material is any of a liposome, a virus particle, and a hollow nanoparticle.

18. (New) The dispersion liquid according to claim 13 for being introduced into a living body.